

## **REMARKS**

Claims 1-2, 6-7, 10, 12, 15, 21-23, 25-26, 30-31, 34, 36, 39, 43-46, 50-51, 54, 56, 59, and 63-64 have been amended. Claims 1-64 remain pending in the application. Reconsideration is respectfully requested in light of the following remarks.

### **Section 103(a) Rejections:**

The Examiner rejected claims 1-3, 5-7, 11-15, 18, 21, 22, 25-27, 29-31, 35-40, 43, 45-47, 49-51, 55-60 and 63 under 35 U.S.C. § 103(a) as being unpatentable over Davis et al. (U.S. Patent 6,105,064) (hereinafter “Davis”) in view of Dreke et al. (U.S. Publication 2002/0035594) (hereinafter “Dreke”) and Black et al. (U.S. Patent 5,878,056) (hereinafter “Black”), claims 4, 8-10, 28, 32-34, 48 and 52-54 as being unpatentable over Davis, Dreke and Black in view of Barker et al. (U.S. Patent 5,931,916) (hereinafter “Barker”), claims 16 and 17 as being unpatentable over Davis, Dreke and Black in view of Ivanoff (U.S. Patent 5,517,622), claims 19, 20, 41, 42, 61 and 62 as being unpatentable over Davis, Dreke and Black in view of Antur et al. (U.S. Patent 6,212,558) (hereinafter “Antur”), and claims 23, 24, 44 and 64 as being unpatentable over Davis, Dreke and Black in view of Zhu et al. (U.S. Patent 5,768,557) (hereinafter “Zhu”). Applicants respectfully traverse these rejections for at least the following reasons.

Regarding claim 1, the cited references fail to teach or suggest a peer node that is configured to *establish a communications channel between a network interface of the peer node and a network interface of another of the plurality of peer nodes, wherein establishing the communications channel comprises instantiating a pipe of a particular one of a plurality of pipe types between the peer node and the other peer node, wherein the pipe type is reliable, and wherein, on the pipe, delivery of messages sent from an output endpoint to each of one or more input endpoints connected to the communications channel in accordance with a pipe binding protocol is guaranteed*. Applicants assert that there is nothing in Davis, Dreke, or Black describing the instantiation of pipes between peer nodes at all, much less the instantiation of a pipe of a particular type (from among

multiple pipe types), a pipe type of reliable, or that delivery of messages over a reliable type pipe that are sent from an output endpoint to each of one or more input endpoints connected to the communications channel in accordance with a pipe binding protocol is guaranteed. While Ivanoff describes that instances of pipes can be used for communication between adjacent communications managers, there is nothing in Ivanoff describing a pipe binding protocol, pipes of multiple types, a particular pipe type of reliable, or that delivery of messages over a reliable type pipe that are sent from an output endpoint to each of one or more input endpoints connected to the communications channel in accordance with a pipe binding protocol is guaranteed.

The cited references also fail to teach or suggest a peer node that is configured to *transmit messages to the other peer node over the reliable pipe; receive acknowledgement that one or more of the transmitted messages have been received by the other peer node; and retransmit messages not acknowledged as received by the other peer node to the other peer node on the reliable pipe*. Applicants again assert that nothing in the cited references teaches or suggests the reliable pipe of Applicants' claim (i.e. a pipe type of "reliable"), or the delivery of messages over such a reliable pipe.

The Examiner has previously asserted that it would have been obvious to one of ordinary skill in the art to modify Davis' teachings for the protocols to be implemented as a messaging protocol independent of the network transport protocol as taught by Black, which would allow Davis' protocols to operate on different transport protocols. As explained in Applicants' Appeal Brief and Reply Brief, Applicants disagree with the Examiner's position. In addition, Applicants assert that since none of the cited references teach or suggest a pipe binding protocol, pipes of multiple types, a particular pipe type of reliable, or that delivery of messages over a reliable type pipe that are sent from an output endpoint to each of one or more input endpoints connected to the communications channel in accordance with a pipe binding protocol is guaranteed, even if the references were combined, the combination would not teach or suggest Applicants' claimed invention. Thus, the reasons given in the Decision on Appeal for upholding the rejections have been overcome.

For at least the reasons stated above, Applicants assert that the Examiner has failed to establish a *prima facie* rejection of claim 1. Therefore, removal of the rejection of claim 1 is respectfully requested.

Claims 25 and 45 include limitations similar to the above-referenced limitations of claim 1. Therefore, the arguments presented above apply with equal force to these claims, as well.

Regarding claim 6, the cited references fail to teach or suggest that *to receive acknowledgement that one or more of the transmitted messages have been received by the other peer node, the peer node is further configured to receive the acknowledgement indicating that the M messages have been received, and wherein the peer node is further configured to: shift the window of N messages in the buffer by M messages; and transmit the messages in the shifted window of N messages to the other peer node over the reliable pipe*. In rejecting claim 6, the Examiner has previously cited Davis as teaching these limitations in column 29 and 30. However, the cited passages describe sending packets according to the window size, and increasing or decreasing the size of the window in an attempt to decrease congestion. There is nothing in Davis describing shifting a window of N messages (i.e. a window of unchanged size) by M messages (where M is less than N) and transmitting the messages in the shifted window of N messages to the other peer node. In addition, Applicants again assert that none of the cited references, whether taken alone or in combination, teach or suggest the transmission of any messages over a reliable pipe, according to the limitations thereof recited in Applicants' claims.

For at least the reasons stated above, Applicants assert that the Examiner has failed to establish a *prima facie* rejection of claim 6. Therefore, removal of the rejection of claim 6 is respectfully requested.

Claims 30 and 50 include limitations similar to the above-referenced limitations of claim 6. Therefore, the arguments presented above apply with equal force to these claims, as well.

Regarding claim 7, the cited references fail to teach or suggest that *the shifted window of N messages includes one or more messages previously transmitted to the other peer node over the reliable pipe and one or more messages not previously transmitted to the other peer node*. In rejecting claim 7, the Examiner has previously cited Davis as teaching these limitations in columns 6, 29, and 31. However, the cited passages describe changing the send window size for various reasons. As noted above, there is nothing in Davis describing shifting a window of N messages (i.e. a window of unchanged size) by M messages (where M is less than N) and transmitting the messages in the shifted window of N messages to the other peer node, much less that the shifted window of N messages includes one or more messages previously transmitted to the other peer node and one or more messages not previously transmitted to the other peer node, as in Applicants' claim. In addition, Applicants again assert that none of the cited references, whether taken alone or in combination, teach or suggest the transmission of any messages over a reliable pipe, according to the limitations thereof recited in Applicants' claims.

For at least the reasons stated above, Applicants assert that the Examiner has failed to establish a *prima facie* rejection of claim 7. Therefore, removal of the rejection of claim 7 is respectfully requested.

Claims 31 and 51 include limitations similar to the above-referenced limitations of claim 7. Therefore, the arguments presented above apply with equal force to these claims, as well.

Regarding claim 10, the cited references fail to teach or suggest that *to receive acknowledgement that one or more of the transmitted messages have been received by the other peer node, the peer node is further configured to receive the acknowledgement indicating that the messages have been received, and wherein the peer node is further*

*configured to: shift the window of N messages in the buffer by the count of messages received in continuous sequence; and transmit the messages in the shifted window of N messages to the other peer node over the reliable pipe.* In rejecting claim 10, the Examiner has previously cited Barker as teaching adjusting the window for the transmission of packets by setting the window based on the sequence of the datagram and retransmitting packets based on the window. The Examiner submits that the suggested combination would allow the sender endnode to dynamically adjust the window size according to the received sequence and improve the flow of traffic. Applicants assert, however, that Barker fails to teach or suggest shifting a window of N messages in the buffer (i.e. a window of unchanged size) by the count of messages received in continuous sequence, and transmitting the messages in the shifted window of N messages to the other peer node over a reliable pipe, as in Applicants' claim. In addition, Applicants again assert that none of the cited references, whether taken alone or in combination, teach or suggest the transmission of any messages over a reliable pipe, according to the limitations thereof recited in Applicants' claims.

For at least the reasons stated above, Applicants assert that the Examiner has failed to establish a *prima facie* rejection of claim 10. Therefore, removal of the rejection of claim 10 is respectfully requested.

Claims 34 and 54 include limitations similar to the above-referenced limitations of claim 10. Therefore, the arguments presented above apply with equal force to these claims, as well.

Regarding claim 12, the cited references fail to teach or suggest that *the peer node and the other peer node are further configured to: monitor the rate at which messages are retransmitted to determine reliability of the communications channel on the network; and adjust the values of M and N dependent on said reliability of the communications channel.* In rejecting claim 12, the Examiner has previously cited Davis as teaching similar limitations (e.g., in columns 30-32). However, the cited passages of Davis describe adjusting the size of a sending window based on the packet throughput measured

when using sending windows of different sizes. None of the cited references, whether taken alone or in combination, teach adjusting both a transmit window size and a receive window size dependent on the monitoring of a retransmission rate, as in Applicants' claim.

For at least the reasons stated above, Applicants assert that the Examiner has failed to establish a *prima facie* rejection of claim 12. Therefore, removal of the rejection of claim 12 is respectfully requested.

Claims 36 and 56 include limitations similar to the above-referenced limitations of claim 12. Therefore, the arguments presented above apply with equal force to these claims, as well.

Regarding claim 16, the cited references fail to teach or suggest that *the peer node comprises an instance of a pipe service executable within the peer node to establish the communications channel, transmit the messages to the other peer node over the reliable pipe, receive the acknowledgement over the reliable pipe, and retransmit the messages not acknowledged as received over the reliable pipe in accordance with the pipe binding protocol*. In rejecting claim 16, the Examiner has admitted that Davis fails to teach that the peer node comprises an instance of a pipe service executable within the peer node to establish the communications channel, and relies on Ivanoff to teach this aspect of Applicants' invention, citing columns 7, 10, 60, and 61. While these and other passages of Ivanoff describe that an instance of a pipe can be used for communication between two adjacent communications managers, there is nothing in Ivanoff describing a pipe binding protocol, pipes of multiple types, a particular pipe type of reliable, or that delivery of messages over a reliable pipe that are sent from an output endpoint to each of one or more input endpoints connected to the communications channel in accordance with a pipe binding protocol is guaranteed. Therefore, Applicants again assert that none of the cited references, whether taken alone or in combination, teach or suggest the transmission of any messages over a reliable pipe, according to the limitations thereof recited in Applicants' claims. In addition, nothing in Ivanoff describes the communications

managers as being (or including) a pipe service that is executable to establish the communications channel, transmit the messages to the other peer node over the reliable pipe, receive the acknowledgement over the reliable pipe, and retransmit the messages not acknowledged as received over the reliable pipe in accordance with the pipe binding protocol, as no such pipe binding protocol is described in any of the cited references.

For at least the reasons stated above, Applicants assert that the Examiner has failed to establish a *prima facie* rejection of claim 16. Therefore, removal of the rejection of claim 16 is respectfully requested.

Regarding claim 17, the cited references fail to teach or suggest that *the other peer node comprises another instance of the pipe service executable within the other peer node to receive the transmitted messages over the reliable pipe and transmit the acknowledgement to the peer node over the reliable pipe*. In rejecting claim 17, the Examiner again relies on Ivanoff to teach the pipe service instance of Applicants' claims. However, as noted above, nothing in Ivanoff describes the communications managers as being (or including) a pipe service, according to the limitations thereof recited in Applicants' claims. Applicants again assert that none of the cited references, whether taken alone or in combination, teach or suggest the transmission of any messages over a reliable pipe, according to the limitations thereof recited in Applicants' claims.

For at least the reasons stated above, Applicants assert that the Examiner has failed to establish a *prima facie* rejection of claim 17. Therefore, removal of the rejection of claim 17 is respectfully requested.

Regarding claim 21, the cited references fail to teach or suggest that *one or more other of the plurality of peer nodes are configured to connect to the communications channel in accordance with the pipe binding protocol, wherein the peer node is further configured to: transmit messages to the one or more other peer nodes over the reliable pipe; receive acknowledgements that one or more of the transmitted messages have been received by the one or more other peer nodes; and retransmit messages not*

*acknowledged as received by the one or more other peer nodes to the one or more other peer node on the reliable pipe.* In rejecting claim 21, the Examiner has previously admitted that Davis does not specifically teach a similar aspect of Applicants' claim, stating, "However, it is well known in the art that a peer is capable of communicating with more than one peer in a peer-to-peer system and that peers may join a peer group. It would have been obvious to one of ordinary skill in the art to modify the suggested system for the sending node to communicate with more than one receiving endnode, wherein communication involves transmitting messages, receiving acknowledgement, and retransmitting messages not acknowledged to the other peer node, which would increase the sharing of resources in a network." Applicants assert, however, that the claim does not merely require that a peer can communicate multiple other peers, but that following the establishment of a communications channel between two peers (which includes instantiating a reliable pipe), that one or more other peers can connect to that same communications channel according to a pipe binding protocol, and can then exchange messages with the original peer node over the same reliable pipe.

Applicants again assert that none of the cited references, whether taken alone or in combination, teach or suggest the transmission of any messages over a reliable pipe, according to the limitations thereof recited in Applicants' claims, or the pipe binding protocol of Applicants' claims.

For at least the reasons stated above, Applicants assert that the Examiner has failed to establish a *prima facie* rejection of claim 21. Therefore, removal of the rejection of claim 21 is respectfully requested.

Applicants also assert that numerous other ones of the dependent claims recite further distinctions over the cited art. However, since the rejection has been shown to be unsupported for the independent claims, a further discussion of the dependent claims is not necessary at this time.



## CONCLUSION

Applicants submit the application is in condition for allowance, and notice to that effect is respectfully requested.

If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5681-07400/RCK.

Respectfully submitted,

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